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BITCOIN'S POTENTIAL OPPORTUNITIES IN DEVELOPING COUNTRIES

A qualitative investigation into the potential opportunities Bitcoin as a technical
infrastructure can bring in developing countries

Keywords: Bitcoin - Developing Countries - Opportunities - Application

Student: Ammy Edberg
Supervisor: Akhil Malaki

Preface

I would like to say thank you to everyone involved in this study, those who brought suggestions and ideas to my work. I would like to thank my supervisor, Akhil Malaki, who contributed with support, knowledge, valuable feedback and constructive criticism. Finally, I would like to show extra gratitude to the respondents who have volunteered for an interview and set aside time for the essay. Thanks. Without you, this essay would not have been made possible.

Abstract

The purpose of this essay is to investigate and analyze the opportunities Bitcoin could bring as a technical infrastructure in developing countries, and speculate how feasible an implementation of this could be. Financial systems play a central role in a well-functioning society, but these systems are, however, far from being present in many countries. Today, globally, 1.7 billion people lack access to a financial substitute, many of these people are from developing countries. Researchers believe that financial integration can increase by using mobile technology, a currency that could possibly make this possible is Bitcoin. This study answers, through a qualitative interview study, the question of what opportunities Bitcoin could bring in developing countries. The essay also provides guidance on whether an implementation of Bitcoin in society is possible.

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1. Introduction

1.1 Introduction

Since ancient times, financial systems have played a central role in a well-functioning society. The majority of payments made around the world are linked to flexible and simple payment systems, usually payment cards linked to financial institutions, digital systems linked to institutions, or through other digital solutions (Patwardhan, 2018:71). The financial systems that are often taken for granted are not rooted in what reality looks like for everyone. In fact, this reality is far from apparent in many countries (ibid:61). Globally, 1.7 billion people (over the age of 18) lack access to a bank account and to a financial institution. Of these people, just over half come from the poorest 40 percent of the global population, basically this entire group belongs to developing countries (World Bank Group, 2017). Given the opportunities that come with access to a bank account, this is used by the World Bank as an important indicator of financial inclusion (ibid).

Financial means are largely based on trust and when a new form of payment is introduced, people's acceptance is the most important influencing force (Aykens, 2005). Hyperinflation and banking crashes have contributed to developing countries increasingly distrusting financial institutions (World Bank Group, 2017). Parallel to this, new forms of means of payment are being discovered as a consequence of our increasingly digitized world, means of payment which mean that the financial could take a step away from the institutional. According to Patwardhan (2018) and Makina (2019), there is great potential for increased financial inclusion if we manage to utilize mobile technology (Patwardhan, 2018) (Makina, 2019). Of the 1.7 billion people who today fall outside the global financial system, a large percentage have access to a mobile phone. Patwardhan (2018) believes that technological developments can help people carry out financial transactions through their mobile phones, without access to a bank account (Patwardhan, 2018). One digital currency that could make that possible is Bitcoin. However, according to Möllering (2001), trust and acceptance are required for Bitcoin to be implemented in society. In theory, Bitcoin could give rise to more people gaining access to the financial system, including the 1.7 billion people who today lack access to a bank account (Möllering, 2001). Thus, it is relevant to investigate what opportunities Bitcoin as a technical infrastructure could bring in developing countries, as well as give an implication on whether an implementation of Bitcoin in society is possible.

1.2 Purpose and research questions

The purpose of the essay is to investigate and analyze the opportunities Bitcoin could bring as a technical infrastructure in developing countries, as well as speculate on how feasible an implementation of this could be. Hopefully, the paper will contribute to the current research on developing countries' financial progress and help cover a seemingly previous lack of research on Bitcoin's opportunities in developing countries.

Accordingly, in this essay I intend to answer the questions;

- *What are the biggest opportunities Bitcoin could bring as a technological infrastructure in developing countries?*
- *How feasible is an introduction of this?*

1.3 Limitations

It would have been relevant to investigate more cryptocurrencies with different characteristics to see what opportunities they could bring in developing countries, but that falls outside the time frame of the paper. Bitcoin is the largest and most established digital currency, which makes it a natural starting point for this research topic. The opportunities Bitcoin and other cryptocurrencies can bring are many. This study is mainly limited to private financial opportunities. Other aspects are left out of the study. The paper does not have a specific time frame but leans towards Bitcoin's opportunities in developing countries in general.

1.4 Disposition

The essay is arranged as follows: Chapter 1 deals with the essay's theoretical frame of reference, the methodological choices made in accordance with the essay's implementation, previous research that highlights both Bitcoin's integration in society and the general risks Bitcoin can entail when establishing in countries. Chapter 2 consists of a background chapter on Bitcoin and its meaning to give the reader a good understanding of the subject. Chapter 3 summarizes the essay's empirical evidence, which consists of five semi-structured interviews, followed by chapter 4 which analyzes the essay's empirical evidence in relation to previous research and the essay's theoretical frame of reference. Finally, the essay's conclusions are presented in chapter 6, which is also where the essay's research question is answered.

1.5 Previous research

1.5.1 Integrate Bitcoin into existing societal structures

Bitcoin and its underlying blockchain technology are burgeoning fields of research with shared research results. Shin and Rice (2022) research the need to integrate cryptosystems into existing human systems and social structures. They believe that cryptocurrencies will have a significant impact on the market and that a large part has already happened. By enhancing the security and trust of the already existing societal structures, the possibilities of cryptocurrencies can transform society into a higher level of the digital era. Furthermore, Shin and Rice (2022) highlight that the revolutionary possibilities of cryptocurrencies will not be in the way that some expect, but that governments will design new systems in fear of a power shift from centralized to decentralized power. The government will purposefully adapt the social and technical elements of how societies develop to realize a national strategy (Shin & Rice, 2022).

Jun (2018) agrees with Shin and Rice (2022) who believe that cryptocurrencies should be seen as a complement and not a substitute for already existing financial structures. He emphasizes how blockchain technology will be an excellent tool for social innovation, not only to improve the efficiency of government but also for society. However, he believes that the technology is still emerging and not fully developed. More time is required to exploit the full potential of blockchain technology and more tasks must be solved before the technology is integrated into a functioning society. However, Jun (2018) conducted his research in 2018 and blockchain technology has developed a lot since then (Jun, 2018). Saidi, Broström and Ruiz (2020) also study the introduction of an infrastructure that supports Bitcoin's use as a digital currency, both such as Bitcoin's peer-to-peer network as well as infrastructure that facilitates the integration of Bitcoin into the mainstream economy. Their findings provide some support for the notion that Bitcoin adoption is driven by perceived shortcomings of traditional financial institutions and systems, just as researchers such as Vigna and Casey (2015) have hypothesized. To draw conclusions like these, Saidi, Boström and Ruiz (2020) have investigated the activity in the operation of Bitcoin nodes in different regions, and found more activity in the operation of the nodes in regions with low trust in banks and financial systems. Furthermore, they find greater demand for Bitcoin infrastructure in years when countries are undergoing inflationary crisis, potentially due to a loss of confidence in central bank-issued currencies or turning to Bitcoin as a type of store of value (Saidi, Boström & Ruiz, 2020). Even Ølnes and Jansen (2017) seem to agree with other

researchers that Bitcoin should be seen as a complement to the current system. Their research argues that Bitcoin and its technological infrastructure is a forward-growing platform for further innovation, not only financially but also for the public sector. However, they underline the difficulty of breaking down organizational and institutional barriers. Given the promising benefits of blockchain technology, researchers in financial management fields should begin to discuss these important issues. This raises questions such as whether government agencies are ready to explore the potential of blockchain technology and what are its main obstacles (Ølnes and Jansen, 2017).

1.5.2 Risks of Integrating Bitcoin

Just as much research has been conducted on integrating Bitcoin into society, there is some research on the risks this could entail. Segendorf (2014) believes that a major risk with countries starting to use Bitcoin instead of their current national currency is its volatility. The value of Bitcoin is based only on people's expectations, which means that development becomes sensitive to these. The volatility means that when people buy or sell Bitcoin, profits or losses can be made (Segendorf, 2014:82). Yermack (2013) claims that the value of Bitcoin must become more stable in order for it to become more extensive than a speculative investment (Yermack, 2013:16). In addition, he emphasizes that Bitcoin's deflation mechanism will cause long-term structural problems. That it is built into Bitcoin's protocol that there will only be 21 million will result in a deflationary effect on the economy (Yermack, 2013:17). Other researchers who are skeptical of Bitcoin are Hossin and Hossain (2018). They believe that Bitcoin fails as both a measure of value and a store of value. However, they present a potential solution to the problem of volatility. They believe that Bitcoin's value could be tied to another currency, for example the US dollar, which would reduce Bitcoin's volatility and make it more stable and predictable (Hossin & Hossain, 2018:399). However, they emphasize that it is unlikely that this will happen because Bitcoin's network is made with the characteristic of being decentralized and impossible to regulate. The whole idea of Bitcoin is to be independent from central authorities (ibid).

Segendorf (2014) also believes that Bitcoin entails a great risk as the opportunities to assert one's rights are few. If a person loses their Bitcoins through fraud or accidents, they cannot be recovered in any way. This means both if the hard drive were to be destroyed, or if the encryption key were to be lost (Segendorf, 2014:82). Vigna (2017) also talks about the security problem that exists regarding Bitcoin and exemplifies this with cash. If a robber steals cash, it cannot be recovered (Vigna, 2017:2). The use of

Bitcoin immediately becomes more risky because Bitcoin is not imbued with any laws. This leads to weak consumer protection, which means that if a person loses money in Bitcoin, it can be difficult to get their money back. If this happens in fiat currencies, an insurance case can often be made and the money can be recovered (Segendorf, 2014:71). The term fiat refers to a national currency created by a central and ensuring institution, and which does not rely on a monetary base or other underlying asset that guarantees its value (Currency Trade, uå). Yermack (2013) also highlights the increased risk Bitcoin entails due to inadequate consumer protection. Authorities have no legal ability to take possession of Bitcoin and act against those who do not follow the rules, which also means that authorities have little ability to enforce laws. In addition, the users' connection to the loan sector is affected because no authority can step in and seize capital if the loan is not repaid (Yermack, 2013:17).

It is clearly depicted in previous research that Bitcoin is a divided subject with researchers who are both positive and negative towards the phenomenon. That there are researchers who are critical of Bitcoin is relevant to mention in this essay in order to get a fairer picture of the subject as the essay starts from a more positive angle. Knowing in advance that there are researchers who speculate about how Bitcoin can be integrated into society and that there are researchers who are critical of Bitcoin, this essay is given a good foundation to stand on, while the essay will develop and probably cover it to there seems to be a previous lack of research regarding the opportunities Bitcoin can bring to developing countries as a technical infrastructure.

1.6 Theoretical framework

1.6.1 The Austrian school

The decentralization of money offered by virtual currencies, such as Bitcoin, has its roots in the Austrian school of economics. Hayek (1976) believes that what is valuable to one person is not as valuable to another. Emphasis is placed on the drive and outlook of the individual and on the fact that the functioning of the economy depends on the sum of each individual's actions (Hayek, 1976). The arguments about the monetary policy of the Austrian school are often linked to how earlier currencies were secured by the gold standard, this meant that money was convertible to a metal, which could be guaranteed by central banks. The Austrian school holds that economic growth will cause prices of goods and services to fall, because the money supply is fixed. This means that people can buy desired amounts of goods and services with their money (Ammous, 2015). Bitcoin's limited quantity thus does not pose an obstacle to the currency's growth and

adaptability. If more individuals apply the currency, purchasing power will increase, making it more attractive, both as a means of payment and as a store of value. The Austrian school can explain Satoshi Nakamoto's (the pseudonymous creator of Bitcoin) view of the money supply, as well as the diminishing profits of those who mine new Bitcoins (ibid).

The launch of Bitcoin itself does not stem from any ideological motive. In Nakamoto's whitepaper, Bitcoin is not identified with any concept, neither libertarian or Austrian, but with purely pragmatic motives (Nakamoto, 2008). Nevertheless, Bitcoin grew in the neoliberal tradition of market economy as a product of liberalization, deregulation and privatization. By applying Foucault's (1982) concept that autonomy is a desirable state of mind, several implications for governing institutions can be derived. Foucault does not define government as an institution, but believes that it contradicts the reality that exists in most countries around the world, where institutions call themselves government. Foucault's concept emphasizes that when people strive for self-governance, institutions are no longer responsible for governing people. Although this may be perceived as a theoretical approach, it is a useful approach to explain the current developments in the world that result in the development of new financial systems, such as Bitcoin (Trauth, 2018). Hayek (1976) stated that with a decentralized currency we can move towards a freer world, where we do not have to rely on the government to determine the value of a dollar, and where we do not have to rely on financial institutions every time a fiat currency is used (Hayek, 1976).

1.6.2 Financial inclusion

Financial inclusion, according to the definition used in this paper, means that financial systems should be easy to access, be available to use by all members of an economy, and provide universal access to financial services provided by sound and sustainable institutions. This includes savings, investments, payment solutions, loans and insurance. The growing literature on financial inclusion has provided a wealth of evidence on the benefits of an inclusive financial system. Those who fall outside the financial system are those who are traditionally defined as "unbanked". According to Patwardhan (2018), many of the unbanked individuals are financially unhealthy and insecure (Patwardhan, 2018:58). Achieving financial inclusion and financial security is not only an end, but also a means to an end. While financial inclusion may start with account ownership, it doesn't end there. Regular use of these accounts will help with economic growth (ibid:70). The World Bank Group believes that financial inclusion is critical to reducing extreme

poverty and increasing shared prosperity (The World Bank, 2022). Even the UN's goals for sustainable development include greater financial integration as a key goal to reduce poverty (UN, u.å). The World Bank identifies financial inclusion as an enabler for 7 of their 17 Sustainable Development Goals. The G20 has also committed to promoting financial inclusion worldwide and believes that this can be implemented through digital financial inclusion (The World bank, 2022). The above confirms Patwardhan's (2018) assumption that there is an increased awareness of this need and opportunity within the public sector. Decision-makers and regulators have increasingly begun to make financial inclusion a priority in the development of the financial sector. Several governments have introduced comprehensive measures to improve access to financial services. International organizations, as well as the World Bank, have begun formulating strategies to promote financial inclusion. Progress in financial inclusion has been slow but has picked up considerably in recent years (Patwardhan, 2018:59).

The technological revolution has become a key factor in promoting financial inclusion in developing countries, driven by mobile phones, technological innovations and changing consumer mindsets. Several countries have recently begun to take advantage of digital financial services as development tools to support economic growth and to reduce income inequality (ibid). Makina (2019) argues that this is driven from a theoretical perspective by the need to address asymmetric information problems inherent in a financing decision or lack of trust in financial institutions. From another point of view, financial innovations are driven by the reduction of transaction costs. Reduced transaction costs enable efficient coordination and management of information (Makina, 2019:300). Digital financial services made easily accessible through mobile phones or the Internet offer several benefits, such as increased access, reduced costs and increased convenience of transactions. They create an opportunity to provide financial services to the underserved segments on a large scale at a low cost (Patwardhan, 2018:71).

The unbanked consumers do not have access to the formal financial system due to various constraints. Not only do they experience economic insecurity, they also have limited economic resilience and are poorly prepared for economic disturbances such as hyperinflation. This prevents them from exploring opportunities such as positioning themselves for financial security and mobility. Economic insecurity has also been shown to affect physical health and is closely associated with psychological problems such as depression and anxiety (Patwardhan, 2018:61). An increased use of mobile devices creates opportunities for banks but also for other financial products and services

through mobile platforms. This technological innovation in countries like Kenya has accelerated financial inclusion and shown that a bank account is not even necessary for basic banking services (ibid:72). Financial inclusion has been recognized by philanthropic organizations such as the Bill and Melinda Gates Foundation as well as the Omidyar Group and has been listed by the World Bank as a number one priority. But financial integration cannot be done by authorities and foundations alone, but requires active support from banks, capital markets, mobile network operators, technology companies and regulatory authorities (ibid:84). Governments and regulators also need to be supportive and do more through rule reforms and co-financing schemes. Many governments in developing countries are already keen to promote economic development and financial stability. Connections me

1.6.3 Trust theory

Makina (2019) narrowly portrays the importance of the trust required in financial institutions. Trust has become an increasingly central concept in both the social sciences and economics. The American sociologist Bernard Barber believes that trust is important in all relationships, regardless of whether it concerns trust in people, professions or authorities. He believes that trust is a prerequisite for the dynamics and function of relationships (Mechanic, 1996:455). Möllering (2001) emphasizes that this trust is one of the most important forces operating within society, and bases parts of his analysis on the theories of the philosopher George Simmel. Without the trust that exists between people and its institutions, society would crumble. Möllering (2001) develops a model of three stages, where one of the stages is expectation. This is based either on trust or distrust. Another stage is interpretation, which illuminates the human experience and perception of how the world works, and which is a cornerstone of trust. The last stage Möllering (2001) calls merging and constitutes a bridge between our leading interpretation, which results in an expectation. Merging means that we bring together the different interpretations we have and draw a temporary conclusion. As long as the expectation is positive, a trust has arisen (Möllering, 2001:405). Trust theory can be linked to the currency crises the world has gone through. Ayken's (2005) Social Theory of Current Crises links currency crises to trust theory. Ayken's theory was tested during the interwar period on the fall of the gold standard. This affected trust relationships and, as a result, also currency stability (Aykens, 2005:310). Aykens argues that changes in levels of confidence, regarding both market participants and states in the foreign exchange market, have an effect both in times of crisis and stability. Furthermore, he emphasizes how trust is dynamic and nothing that can be taken for granted

(ibid:321). The importance of trust was also something that Bitcoin's pseudonymous creator took into account;

The root problem with conventional currency is all the trust that is required to make it work. The central bank must be trusted not to debase the currency, but the history of fiat currencies is full of breaches of that trust.

- Satoshi Nakamoto, w.y

In relation to the essay's questions, I believe that the above theoretical framework is important. The Austrian school raises implicit assumptions about the basis Bitcoin can be believed to stand on. The financial inclusion shows where developing countries stand today and what is required to increase financial integration, which is essential to cover the essay's question. The trust theory holds that trust can play a decisive role in the implementation of Bitcoin, hence it constitutes a good theoretical framework in speculating about how a feasible introduction of Bitcoin in developing countries could be.

1.7 Empirical material and method

1.7.1 Empirical material and selection of respondents

The study's empirical material is based primarily on primary data, but is supplemented by secondary data. The primary data consists mainly of interviews, and the secondary data has been gathered from internet sources and scientific articles. The secondary material is mainly intended to complement the primary material, and to explain, for example, what Bitcoin is and how its technical infrastructure works, as well as to strengthen some of the respondents' claims. The secondary material also includes some of the previous research that has been conducted in the subject.

The empirical investigation is primarily based on qualitative, semi-structured interviews with people who have knowledge in both Bitcoin and the underlying technology. Consequently, the selection of the respondents was made in exactly this way, to target people with knowledge in the chosen field of investigation. The interviews are therefore conducted with respondents from different backgrounds that suit the topic, both with knowledge of Bitcoin's technical infrastructure and with knowledge of developing countries and their current payment systems, all in order to get as broad a picture as possible. Bitcoin can in many respects be seen as a relatively narrow phenomenon, where the respondents' answers could lead to a relatively equivalent picture. The same could be said about the blockchain. Regarding developing countries, there are no

uniform answers because all countries are different. The empirical investigation leans towards developing countries in general, but in this respect will give an insight into El Salvador, which in September 2021 made Bitcoin legal currency. Investigating the introduction of Bitcoin in more countries is relevant but goes beyond the essay's time frame. This may affect the outcome of the essay, but the performance framework should be reasonably equivalent. The selection of respondents was based on certain criteria. Bitcoin and blockchain technology are considered difficult means of payment for many, which means that respondents require some prior knowledge. The empirical investigation therefore requires that the respondents have both good experience and knowledge in Bitcoin and its technical infrastructure, but also knowledge of developing countries and their payment systems. The interviews are based on five respondents, some of whom have more in-depth knowledge of the underlying technology, and some more in-depth knowledge of Bitcoin's role in developing countries. However, all respondents have good knowledge of both Bitcoin and what opportunities it could mean for developing countries. The respondents were contacted via email and were given the research questions in advance. All but one of the interviews took place over the phone. This took place at BitRefill's headquarters in Stockholm and the respondent was Kalle Rosenbaum. With the help of the interviews, the theoretical frame of reference and previous research, it is investigated what opportunities Bitcoin, as a technical infrastructure, could bring in developing countries, as well as how feasible an introduction of this could be.

Below are the essay's respondents, a brief description of their professional title and relationship to Bitcoin:

- **Knut Svanholm** is a full-time writer and educator. He got proper attention in 2019 in connection with his book "Bitcoin: Sovereignty through mathematics". Since then, he has published two more books, "Bitcoin: Independence Reimagined" (2020), and "Bitcoin: Everything divided in 21 million" (2022). The interview with Knut Svanholm was conducted on 9 December 2022.
- **Kalle Rosenbaum** is a developer with a focus on Bitcoin and its underlying technology. Today he is a consultant and has helped several companies with software development related to Bitcoin, for example Opera Software, Ledger and BitRefill. The interview with Kalle Rosenbaum was conducted on December 15, 2022.

- **Gina Pari** is acting director of Latin America for a Swedish company specializing in payment solutions, called Zimpler. She discovered decentralized technology in connection with her search for investments in 2013. Gina comes from Bolivia and quickly became very involved in the subject when she understood the need for a decentralized payment system for the people who today lack access to financial systems. The interview with Gina Pari was conducted on December 14, 2022.
- **Javier Kafie** is the Brand Manager at Bitrefill, a company whose mission is to let people live on cryptocurrency as easily as possible without the need for bank and exchange accounts. Javier Kafie lives in El Salvador, which in 2021 introduced Bitcoin as a currency along with the US dollar. The interview with Javier Kafie was conducted on December 9, 2022.
- **Alex Gladstein** is head of strategy at the Human Rights Foundation and author of the book "Check your financial privilege". He describes himself as both a student and an educator in Bitcoin. "I am grateful to have learned enough about Bitcoin so that I can share my knowledge with others. That's why I'm both a student and an educator in the subject". The interview with Alex Gladstein was conducted on December 20, 2022.

1.7.2 Overall method

As the purpose of the empirical investigation is to examine and analyze the greatest opportunities Bitcoin as a technical infrastructure could bring in developing countries, as well as to create an understanding of the feasibility of this, a qualitative research approach is preferable. With a qualitative method, it is easier to go in depth in the research of a phenomenon (Bryman, 2018). In view of what previous research has established, it was considered relevant to supplement already existing research by conducting semi-structured interviews with people who possess knowledge of the subject.

According to Bryman (2018), it is important that the interview questions are formulated so as not to become so specific that they can prevent alternative ideas or viewpoints that may arise during the collection of data during the fieldwork. Furthermore, he emphasizes how semi-structured interviews can provide a deeper nuance and discover non-verbal information, which gives the opportunity for flexibility and follow-up questions (Bryman, 2018:301-311). Thus, the respondents have had to start from

questions and thereby give a free answer, based on this there is an opportunity for follow-up questions and further discussion. Some disadvantages of this type of implementation are that the respondent may tend to "float away", and that the answers may be influenced by the person interviewing. Considering that the same interview guide is used for different respondents, it is very likely that many different forms of answers are given. In some cases, the respondent can also talk about the topic instead of giving answers to the questions themselves. In this respect, the risk of this is less, since all respondents have a positive attitude to the subject and are very likely to want to answer the questions that are asked. The disadvantages a qualitative procedure possesses are well known and other methods have been considered. However, a quantitative execution of the survey was not feasible. The reason is that the investigation had become far too conspiratorial and speculative. Since no one knows what will happen in the future regarding Bitcoin and since the research field is in several cases seen as unknown and uncertain, it is made more relevant to investigate attitudes and opinions by interviewing what people think and believe (ibid).

Based on the essay's overall purpose, an interview guide has been created by operationalizing nine interview questions. In the design of the interview questions, the overall research question has been a strong benchmark, while the previous research and theories have been allowed to shape and develop an interview guide. In order to strengthen the essay's reliability and quality, the interviews have been recorded after approval by the respondents and later transcribed. This makes it possible to listen to the interviews afterwards and spend time on a proper transcription of the material.

1.7.3 Ethical considerations

Ethics is an important part of conducting research correctly. Part of the ethics is that the researcher should be transparent during the course of the research, this includes that the researcher is clear about what has been done and in what ways this has been done (David & Sutton, 2016). Another part of the transparency is the choice made of the previous research as it is included in the study and reflected by the respondents' answers. David and Sutton (2016) describe ethical aspects in connection with studies, where the first principle is informed consent. This means that the respondents participate in the research of their own free choice, and that they have been informed about the purpose and implementation of the study. In this study, this can be applied in the email that was sent out to all respondents. The email stated the purpose of the study, which respondents were asked, a description of the interview guide and the interview

questions. Based on this, the respondents could make their own decision whether they wanted to participate in the study or not. David and Sutton (2016) also describe the importance of confidentiality in research as a principle where the researcher makes it clear to the person participating in the study that their identity will or will not be revealed. Confidentiality was taken into account by informing the respondents that they may remain anonymous in the study if desired. The respondents themselves have had to describe their professional title and their relationship to the subject. All respondents have also given permission for the interviews to be recorded. Finally, all respondents were offered the opportunity to read through the transcription, as well as the essay, to ensure that their statements were not misinterpreted.

1.7.4 Credibility

To be able to use the material, it is required that it is of good quality. In science, concepts such as validity, reliability and generalizability are recurring in order for an essay to be considered of good quality in research. Validity refers to the fact that the study measures what it is intended to measure, and reliability refers to how reliable a study is considering whether the study will get the same results if it is carried out again. The concepts are usually adequate for quantitative investigations. Some researchers prefer to use other criteria for assessing the quality of qualitative research. This rather concerns criteria such as credibility, which can be demonstrated by showing that the choice of theoretical perspective and concepts are seen as relevant to the purpose of the study, and that there is a clear description of how the study was carried out (Bryman, 2018). The credibility of this essay can be strengthened by the fact that the investigation stands firmly on basic theoretical formations and is based on previous research. During the execution of the study, the overarching research question has had to form a benchmark, both when searching for previous research but also when constructing the interview questions. When the interview questions were developed, the essay's theories and previous research were operationalized to put the study in relation to them, all with the aim of logically and systematically filling gaps in the research. Since the study is based on a qualitative process, there is no given answer as to whether the same results would have been given in a repetition of the study. Believing that another researcher would get exactly the same answer when repeating the study is therefore made unlikely. The assessment can also be made on which respondents were asked. All respondents in the study have sufficient understanding and contribute with a well-founded view of the subject area. Since all respondents have a positive attitude to the subject, credibility is compromised. If respondents with a negative attitude had been interviewed, the

answers would probably have been affected. It is of great relevance to weigh both positive and negative attitudes to the subject, but due to the time limit of the study, this was not possible in this study.

To some extent, the study can be generalized. Concepts and aspects are potentially described in broad terms. Through the study, the reader gains conceptual approaches and considerations about the subject that can be seen as useful for generalizing the subject to similar contexts. Seen to the extent that the reader gets a broad understanding of Bitcoin's possibilities, the study is generalizable. But since the study is aimed at developing countries in general, it is unlikely to claim that the study's results are so safe and can be applied to all developing countries.

2. Background

2.1 The pursuit of the ideal money

The pursuit of ideal monetary systems has been going on for centuries. Mathematician John Nash argued for the enormous value of using money as a standard measure, a concept which assumed that all central banks would agree to share a single index which he extrapolated from the profitability of the gold standard but with a range of prices to decentralize some of the weaknesses with the unique nature of the gold standard (Nash, 2002:4-11). Even the economist Friedrich Hayek (1976) has searched for new economic monetary systems and concludes that the best monetary system would be one that replaced state-issued currencies with currencies issued by private banks. He argued that this would help to avoid the worst excesses of centralized control, especially with regard to the money supply and interest rate setting. Nevertheless, Hayek admitted that his radical proposal was unlikely to ever be adopted because the primary obstacle was political, the agency that would be asked to give up its control of the monetary system would also be trusted to implement the policy (Hayek, 1976). In an interview given at the University of Freiburg in 1984, Hayek states the following:

I don't believe we shall ever have good money again before we take the thing out of the hands of the government, that is, we can't take them violently out of the hands of the government, all we can do is by some sly roundabout way introduce something they can't stop.

- Hayek, 1984.05.01

Even Milton Friedman (1999) has researched similar economic phenomena. Seeing the rise of the Internet, he predicted the need for electronic cash, a currency that would alleviate the need for other national currencies, and that would facilitate financial independence without relying on governments and central banks to make payments. He described this concept as a “decentralized currency,” which is how cryptocurrencies are technically designed. Friedman (1999) argued that the Internet is one of the most important forces in reducing the role of government, and that the only thing missing, but soon to be developed, is a reliable method of transferring money from A to B over the Internet without A knowing B or without B knowing A. Friedman believed that this kind of change in monetary policy and the economy as a whole is inevitable (Friedman, 1999).

2.2. Bitcoin and its technical infrastructure

Dr. Saifdean Ammous (2018) has conducted research on both past and present monetary systems. He believes that there is ingrained corruption in most fiat states, and that today's monetary system has invisible costs. His argument lies primarily in the government's handling of monetary value and inflation. In his research, he concludes that Bitcoin is such advanced money that it essentially fulfills Nash's definition of "idealistic money" (Ammous, 2018). Sweden's tax authority defines Bitcoin as a payment network that can be used to transfer capital via the internet, be sold on digital trading platforms and in certain contexts also be used as a means of payment. Bitcoin has a public exchange rate that is continuously quoted on various trading sites on the Internet, although it cannot be equated with a legally regulated currency. There is no institution, such as a government or central bank, that guarantees the value of the currency. Nor is Bitcoin covered by any legislation and lacks a formal issuer (Skatteverket, u.å).

Bitcoin's publisher hides behind the pseudonym Satoshi Nakamoto. The unknown person or group of individuals hiding behind the pseudonym wanted to solve the problems of double spending. Double spending is a classic problem in today's payment systems with digital cash. Since a digital coin can be copied, there is nothing to prevent its users from handing the coin to someone else while keeping a copy. The easiest way to solve the problem is for a central authority to keep track of what has been spent. However, what makes Bitcoin different from other currencies is that it is completely decentralized and lacks a central authority. The system is based on a so-called peer-2-peer technology. When Bitcoin is transferred from address A to address B, a transaction is created by the owner of address A. According to the problem of double spending, the owner of A could simultaneously send out a similar transaction where the

sum was instead sent to address C, and another to address D. In order to the owner of address B must be able to be sure that the transaction is confirmed, the network must understand which transaction is the real one. There is no central authority that can approve transactions, instead Bitcoin has a public, distributed database, the blockchain. All transactions that take place in the Bitcoin network are stored in the blockchain. For a transaction to be confirmed, it must be included in a block. A block is composed of the transactions to be included, a reference to the previous block, and an arbitrary value. The process that determines the "right" transactions to be included in a block is called "mining", which is the function that makes double spending impossible. Briefly summarized, Bitcoin is based on an agreement in a network that enables a new form of payment system (Nakamoto, 2008). Knut Svanholm explains Bitcoin that way, as an agreement.

Bitcoin is an agreement between people on a fixed set of rules. If you agree with the rules, you can join. If you don't agree with the rules, you can change them, but then you don't have as many people to play with.

- Knut Svanholm

Furthermore, he makes an analogy between Bitcoin and Chess.

It's just like the rules of chess. If you play chess according to the rules that everyone agrees on, you can play with all the other chess players in the world, and thus get the maximum benefit from chess. If you instead play with other rules, you can change the rules as best you want, but then you don't get as many people to play with. In short, Bitcoin enables a way for people to communicate, trade and interact in a way that is good for everyone.

- Knut Svanholm

From a user perspective, Bitcoin's peer-2-peer system could be compared to cash, but on the Internet. Instead of a central entity, the Bitcoin network is controlled by all users around the world (Nakamoto, 2008). This means that Bitcoin is the first decentralized peer-2-peer system powered only by a consensus between its users, and that it enables a completely new form of payment system.

According to the American Gavin Andresen, who has been a front figure for Bitcoin and who founded the Bitcoin foundation in 2012, Bitcoin's decentralization is of the highest priority, above all he believes that Bitcoin is given further decentralization after Satoshi leaves the project (Andresen, 2014). For many people, this is Bitcoin's most important feature, that it is completely independent from the government, banks and institutions.

This means that no single party or authority can stop, manipulate or in any way influence a transaction in the blockchain. In addition, Bitcoin's blockchain is public and all transactions that occur in the blockchain are made available to the public (Nakamoto, 2008). Bitcoin's free market is expressed primarily in its free access to the cryptocurrency system, through public access to blockchains, and in the currency market mechanism itself. The supply of Bitcoin is fixed in advance and governed by a mathematical formula. This allows the currency to be used as an inflation hedge, and used as an investment asset with value storage. To extract new Bitcoins, a method called 'mining' is used. In total, 21 million Bitcoins will be created. The problem of inflation was something that Satoshi took into account when creating Bitcoin which resulted in its mathematical formula (Nakamoto, 2008). In the Unchained Podcast, Ammous (2020) cites principles from the Austrian School of Economics and argues that Bitcoin's resistance to inflation is the key to Bitcoin's supremacy as a currency.

From an Austrian perspective, there is a recognition that money is a unique commodity whose entire quantity does not matter. The number of monetary units does not matter, what matters is its purchasing power. So people don't prefer 10 yen over a US dollar, they still prefer a US dollar over 10 yen because the value of a US dollar is more than 10 yen. So it's not the number of units you get, it's the purchasing power. And if you think about it that way, there's no reason why a fixed-asset monetary asset can't function as money. In fact, you would argue that this is better money... This is the most advanced form of money ever invented, precisely because it is something whose supply is completely resistant to inflation.

- Ammous, 2020.08.25

The concept of Nash's idealistic money is similar to that of standard units, that money is a function of a standard measure. The inflation rate of idealistic money should be close to zero and serve as a means of preserving wealth. From this point of view, it becomes obvious that Satoshi solved the problem described by Nash (Nash, 2002).

However, Bitcoin is more than a payment network, it is a technological infrastructure in constant development with no single central decision-making authority. Everyone can participate and propose changes that are voted on in a democratic way. It can be added that Bitcoin's basic blockchain is called "Layer 1" of several layers above where the focus is on, for example, speed and scalability (Lightning Network), distributing identities (Microsoft / ON Network) and smart contracts (RGB) (Nakamoto, 2008).

3. Empirical investigation

3.1 Bitcoin's opportunities in developing countries

3.1.1 Overall Interview Results

In the following section, the respondents' answers to the interview questions are presented. The division of the subheadings has been set in connection with the transcribing of the interviews, but also to interact with the essay's questions. As an opening quote, I choose to highlight two statements by Alex Gladstein that sum up the remaining empirical evidence.

Regarding the opportunities Bitcoin could bring in developing countries, Alex Gladstein believes that Bitcoin, as an opportunity, is not a question of "can", but that we already see that Bitcoin brings opportunities in developing countries.

Bitcoin's opportunities, it's not a matter of "could". Bitcoin is already bringing new infrastructure to developing countries in Africa, Southeast Asia, Latin America, the Middle East, Central Asia.

- Alex Gladstein

Alex Gladstein continues on an overall level to go through the opportunities that Bitcoin brings in developing countries.

Bitcoin allows people to trade and connect, where the current system keeps them divided and cut off. It allows people to easily send payments. It allows people to connect to the wider global economy where they are currently restricted from doing so. It allows people to get around capital controls, and urban sanctions and things like that that are not related to them personally but are punishments for someone else. It allows women to access a financial tool where in many cases they are restricted from doing so. And it allows people in developing countries to turn energy into money, which is very important.

- Alex Gladstein

3.1.2 Bank the unbanked

All respondents have chosen to highlight the financial exclusion that exists among the population in developing countries. Javier Kafie believes that it is easy to fall outside the monetary systems that exist in many developing countries today.

I think the original idea of introducing Bitcoin as a payment option for unbanked people in El Salvador and other developing countries, it's the right idea. It's an idea with a lot of

potential. In countries like El Salvador, and many other countries in this region, it is very difficult to get access to, for example, a bank account.

- Javier Kafie

Javier Kafie exemplifies this with El Salvador and believes that there are more aspects that must be taken into account to understand why it is difficult for the population of developing countries to gain access to a bank account. El Salvador is one of several countries that act as a bridge in the drug trade that goes from South America to the United States, and because of this, many countries have had to implement very strong laws that make it difficult for the population to access a financial system.

In many cases, to open a bank account, you need to show proof of where you get your money from, even if it's small amounts. You need to present a lot of papers, often you are also required to obtain a legal proof of address, and many people in the countryside do not have that. You have to present your income, and a large part of the population in El Salvador, and I think this is the case for many countries in regions like Asia or Africa, work informally. I'm talking about 50 percent of the population. I don't have the exact amount, but at least 70 percent of the population of El Salvador has informal jobs or sells small things on the streets. For them, it is very difficult to get a bank account.

- Javier Kafie

According to a survey conducted in 2021 by Statista, the rate of informal employment in El Salvador was 69 percent of the total employed population (Statista, 2022). Gina Pari also talks about the difficulty of opening bank accounts and gives examples from Bolivia.

In Bolivia, for example, where I come from, or other Latin American countries, it is very difficult to open a bank account at all. You will be heavily scrutinized and your background will be investigated. It is a very complicated process.

- Gina Pari

Not having access to a bank account means more consequences than not having access to liquid funds. Gina Pari explains that when you gain access to a bank account, more opportunities open up. In many countries, you get access to credit, which gives you an opportunity to create a better basis for taking out loans. In addition, as a private person, you also get access to making signatures, which you are not allowed to do if you do not have a bank account in, for example, Latin America.

If I don't have access to a bank account here in Sweden, I can still take out insurance, and even take out a loan. But in countries where the supply of these services does not exist and where financial means are underdeveloped, it becomes difficult to get access to them at all. In short, you fall into a poverty trap.

- Gina Pari

Continuing, Gina Pari exemplifies the difficulty of not being able to get a loan by telling about a seamstress whose sewing machine breaks down.

Let's exemplify this with a seamstress. If her sewing machine breaks, it is very difficult for her to get a loan because she does not have access to a bank account. Instead, she becomes dependent on a personal loan, and such interest rates are very high, which means that she may not be able to afford a personal loan either. This shows the meaning of having access to a financial system. It is not only access to a bank account and being able to pay one's bills that is essential. For many people, it is much more extensive than that.

- Gina Pari

Knut Svanholm believes that Bitcoin can contribute to increased financial inclusion and provide a solution to the people who are currently unbanked. *"This is where Bitcoin provides a solution. That is one of the benefits that Bitcoin can help bring to developing countries, banking the unbanked"*. Kalle Rosenbaum also highlights the financial exclusion that exists in developing countries, and that Bitcoin can be used as a means to increase financial inclusion.

The biggest opportunity Bitcoin brings to developing countries is that it gives people a money system that works for them, that doesn't exclude them the way today's money system does. Today, these people find it extremely difficult to access a bank account. If you lack documentation, you cannot open an account, and many people lack documentation. The monetary system today is extremely underdeveloped in many ways. Bitcoin provides an opportunity for EVERYONE to access a modern money system, a modern financial infrastructure, that works for everyone and that doesn't ask questions about who you are or what your background is.

- Kalle Rosenbaum

Furthermore, Gina Pari explains that Bitcoin is currently the only stable solution and opportunity available to include people in developing countries in financial systems. She also highlights the simplicity of using Bitcoin.

I believe that of the nearly 2 billion people who currently live without access to any financial system, Bitcoin is the only stable solution and opportunity we have to offer the population of developing countries an alternative monetary system. By simply installing an app or a wallet, you can participate in a global economy that is agnostic, meaning it does not discriminate against you based on your credit rating or social status.

- Gina Pari

Kalle Rosenbaum also emphasizes the simplicity of using Bitcoin. *"The only thing you need to use Bitcoin is an internet connection and some simple computer where you can run a Bitcoin Wallet, and that gives you the opportunity for a financially inclusive system".* Javier Kafie also emphasizes the simplicity and convenience of using Bitcoin as a means of payment but with a focus on the transactions. He says that many people in El Salvador live in rural areas, which has meant that when they have to pay a bill, they have to go to the bank, which is usually located in the center of the city.

In El Salvador when you got your electric or water bill you had to hop on the bus for maybe 40 minutes, go to the bank in town and pay your bill with your cash. We avoid this when we use Bitcoin. With Bitcoin is rather - 30 seconds and voila, you just paid your bill.

- Javier Kafie

Consequently, Javier Kafie also wants to underline the benefits of transactions in Bitcoin, something that Gina Pari also chooses to highlight.

El Salvador is a country where a large part of the population is divided. If you have access to a bank account and want to transfer money, a lot of money is spent on transaction fees, and then I'm talking about a large sum of dollars that ends up being millions. It can be easily avoided if we choose to use Bitcoin transactions. That is a big plus.

- Javier Kafie

If I would like to send SEK 1000 to my mother in Bolivia, approximately SEK 700, depending on the currency, will reach her. A large part of this goes to the GDP of the country you are sending money to. I think this is one of the reasons why El Salvador wanted to introduce it as legal tender, both for the people but also to reduce the inflow of money, so that more money ends up in the country and not with external companies.

- Gina Pari

3.1.3 Bitcoin's Decentralization

In addition to the fact that Bitcoin can represent a financial alternative for the people who today fall outside the financial system, Knut Svanholm highlights the possibility that

Bitcoin brings the freedom to decide over one's own life. All respondents agree that Bitcoin's decentralization is an important opportunity for people. Knut Svanholm highlights the importance of not being dependent on a third party.

As it stands today, we need to trust all banks, central banks and politicians, in everything we do, every single time. Every single time we use fiat currencies, we trust a ton of institutions. If we use Bitcoin, we don't need to trust anyone, then we can verify what happens instead. This is not the case with fiat money, the central powers are also sitting on a money press and can print money out of thin air, and that is a problem that Bitcoin can solve, a problem that is much deeper than people think. Bitcoin simply gives people the ability to take control of their own lives, in a way never before possible in human history.

- Knut Svanholm

It is built into Bitcoin's protocol that there will be a maximum of 21 million Bitcoins. In addition, anyone can verify the amount of money and everything that happens in the Bitcoin blockchain, which also means that no one can print new money in this system. (Nakamoto, 2008). Today there are approximately 19 million Bitcoins, and new ones are created all the time at a decreasing rate (Hedqvist, et al.). Knut Svanholm believes that this construction is Bitcoin's most important feature. *"The fact that Bitcoin is designed so that there will be a maximum of 21 million is the most important thing of all. What was discovered was a way of using mathematics"*. Alex Gladstein agrees with Knut Svanholm that this is one of Bitcoin's biggest advantages because it means that no one will be able to abuse its power and print more money.

All central banks will abuse their power and print more money. This is something we have seen happen since the dawn of history, which makes Bitcoin the first and only digital asset that cannot be abused in this way.

- Alex Gladstein

Javier Kafie also talks about decentralization as one of the biggest advantages that Bitcoin and the blockchain have to offer, and how history has given us several examples of when money has not been handled properly by various actors and therefore lost its value.

I think decentralization is one of the biggest advantages that Bitcoin and the blockchain have to offer. We have seen so many examples of when money and assets are not managed properly by various actors. We have seen many cases of inflation, when our banks suddenly

decide to print more money causing our money to lose its value. That's a huge problem for everyone that Bitcoin is designed to prevent.

- Javier Kafie

Bitcoin is the only digital currency where the amount of the actual money cannot be changed. Alex Gladstein emphasizes this and believes that Bitcoin can form an important foundation for the world to build other currencies on.

There are many other cryptocurrencies. There are many digital currencies. There are many other digital fiat currencies. Bitcoin is the only digital currency where the amount of actual money cannot change and has a limit. It is very important for the world to build on that foundation. Beyond that, humans can create all kinds of other currencies, but having a solid foundation will be very important for human prosperity and prosperity in the future. The hard cap of 21 million Bitcoin is important. It is not as important as the fact that no one can change the amount. There could have been 22 million, 23 million, whatever, 30 million. The important thing is that no one can change it. That's really the key because anything that can be manipulated will be manipulated.

- Alex Gladstein

Gina Pari, like Alex Gladstein, believes that Bitcoin should be seen as a complement to other currencies. She believes that in an idealistic world there would be both a currency issued by a central bank but also cryptocurrencies, such as Bitcoin.

In an idealistic world, we would have a currency issued by a central bank, but also have cryptocurrencies, such as Bitcoin, in parallel. It should be a choice. But I don't see the problem with having alternatives? Something that prevents actors from freezing your account or your money.

- Gina Pari

Knut Svanholm, on the other hand, believes that Bitcoin should not be seen as a complement to already existing currencies, but believes that Bitcoin should be seen as a substitute.

Bitcoin provides opportunities for all countries, and by extension on a Bitcoin standard where everyone in the world uses Bitcoin and accepts nothing else for goods and services. It means a world without national borders and governments, a reality we are moving towards whether we like it or not.

- Knut Svanholm

Furthermore, Knut Svanholm believes that the problem with having a centrally issued currency is that central actors *"sooner or later start to manipulate the money and falsify it"*.

Always when money has historically appeared on the market, a means of exchange is needed so that people can trade with each other without making direct barter. And this is necessary with a constant unit of calculation, to be able to make financial calculations and understand what one's actions lead to in the future. Every time it has arisen in the free market, sooner or later people have started manipulating the money and counterfeiting it. The unit of calculation ceases to be constant. Inflation is a huge problem that few people think about. We think we're getting better, but we could get even better.

- Knut Svanholm

Gina Pari puts inflation in relation to the money printed in the US after the Covid-19 pandemic. Since the pandemic, the US money supply has increased drastically (Surz, 2021).

There will never be more than 21 million Bitcoins and that is where the power lies. If we look at the US dollar, more than 40 to 45 percent of all dollars in circulation have been printed after the pandemic. It's not just something that will affect the US. It is an issue that will obviously affect other economies that are dependent on the American market, such as Germany and the economies here in Europe, but formally the economies in the south, such as Latin America.

- Gina Pari

Because of this, Gina Pari believes that it is of value to have an algorithmic value chain such as that provided by Bitcoin's protocol instead of having the participation of a central bank's solution. *"These are the advantages of having something that is algorithmic in nature, and is not issued through a dialog with possible scenarios from a central bank"*. Kalle Rosenbaum also refers to the Covid-19 pandemic, and puts Sweden's inflation in relation to developing countries, such as Venezuela.

Banks print new money all the time. It is enough to look at the pandemic and Sweden. During the pandemic, the money supply in Sweden increased by 35 percent. In developing countries, unfortunately, this is often much worse, several orders of magnitude worse. Just look at Venezuela.

- Kalle Rosenbaum

The reason why Kalle Rosenbaum chooses to refer to Venezuela is because the country is known for its hyperinflation. According to Statista, Venezuela has experienced continuous and uninterrupted inflation since 1985 (Statista, et al.). That Bitcoin is a solution to such hyperinflation, Kalle Rosenbaum believes is the most important advantage. He believes that this is an opportunity that gives people in developing countries access to a system that does not erode their savings and that enables them to save for the future.

It is perhaps the inflation that is the most important advantage really, that people in developing countries get access to a system that does not erode their savings, that makes it possible for them to save for the future.

- Kalle Rosenbaum

In addition to the fact that Bitcoin's decentralization can solve the issue of high inflation in developing countries, Kalle Rosenbaum also highlights the censorship of central actors.

If there is a central point that must verify and approve transactions, this also becomes a hub for censorship. Any type of financial activity that the state disapproves of can be clamped down on and shut down. With Bitcoin, that doesn't work.

- Kalle Rosenbaum

Continuing, he mentions that he understands the advantages of being able to shut down and put an end to certain activities, *"But if you live in, for example, North Korea where the state has all the power, you might not think so"*. The issue of censorship is one of the reasons why Kalle Rosenbaum strongly believes in a currency decoupled from state or central organizations.

For the people who live in totalitarian states where you are not allowed to express yourself as you want, sell or buy what you want, or leave the country at all, Bitcoin provides an opportunity to bypass government control, and gain control of your own money, access to goods and services you demand. In short, access to one's own life.

- Kalle Rosenbaum

Javier Kafie sees Bitcoin's decentralization as a great opportunity, at the same time he is worried about its technical infrastructure, which means that there will be a ceiling of a maximum of 21 million Bitcoin.

The fact that Bitcoin is designed so that there will be a maximum of 21 million is one thing that worries me. Right now we have produced approximately 19 million Bitcoins. In the end, I am worried that there will be some people who have a lot of Bitcoin, which means that even in this system we create something where some become very rich and others poor. But I guess it's something that can't be avoided.

- Javier Kafie

Furthermore, Javier Kafie talks about Bitcoin's volatility. He believes that Bitcoin's volatility can scare many people because they cannot afford fluctuations in the currency. Accordingly, he gives an example.

If your income is 350 dollars a month, you get paid in Bitcoin, and you have to pay 150 dollars for rent. If the price of Bitcoin goes down, you may suddenly not be able to afford to pay rent. It's hard to tell your landlord you want to pay next month if the price goes up. Maybe the price will go down further instead.

- Javier Kafie

Gina Pari, on the other hand, speaks against it. She explains how some people say that Bitcoin is too volatile for people to have, for example, their salary paid in Bitcoin. *"If there is a dip in the market, obviously their salary will decrease"*. She addresses this by talking about inflation in developing countries, including Argentina, which is one of the countries with the highest inflation rate in the last five years (Statista, et al.).

The same can actually be said about the local currencies issued by the central bank. If we look at Argentina, for example, they have an inflation rate of approximately 80 percent. This means that it is also emphasized there, that even in that scenario, it is easier for many people in these countries to see Bitcoin as an inflation hedge.

- Gina Pari

3.2 Implementation of Bitcoin in Developing Countries

3.2.1 Trust

According to the majority of respondents, trust is an important factor in implementing Bitcoin in developing countries. Javier Kafie believes that when you talk about money and currencies, about 90 percent is about trust. Furthermore, he believes that one needs to understand a phenomenon in order to be able to trust it.

When talking about currencies and money, about 90 percent is about trust. However, people must be able to understand Bitcoin in order to trust it. This is a very drastic example

but if a new medicine is to be launched I would not want to be the first to try it. I would like others to try it first to see if it works and to see what the consequences are. The same can be said about Bitcoin.

- Javier Kafie

At the same time, Gina Pari believes that many people today trust their monetary systems without really understanding them. She also states that we have little say in terms of monetary policy in countries, yet we trust it. The reason for that is because we see it working.

Monetary policy should be part of a democratic system. We have very little to say about monetary policy in Sweden. Generally, there is not enough understanding about it either. Yet the majority of the population chooses to trust it, because they see that it works.

- Gina Pari

Gina Pari believes that the same can be said about Bitcoin. People lack enough understanding of Bitcoin's benefits that it can be perceived as scary. When people understand that Bitcoin actually works, they will start to trust it.

What we have seen in El Salvador is that many people were negative about Bitcoin at first but once they started using the system they saw the benefits. This not only creates better understanding and acceptance, but also contributes to innovation.

- Gina Pari

Javier Kafie tells us that one reason why some people choose not to trust Bitcoin is because of the fear of losing their phone. He says he repeatedly has to explain to people that they don't lose their Bitcoins if they lose their phone. Consequently, he emphasizes that much fear of using Bitcoin is based on an understanding of the phenomenon.

Many people tell me that "No, I don't want to use Bitcoin. What if I lose my mobile, or get robbed. Then I will lose all my money". And I have to explain to them that this is not the case. It's really about their lack of understanding of how Bitcoin works, which makes it hard for them to trust it.

- Javier Kafie

Gina Pari talks about the possibilities of having your wallet in your phone. *"Bitcoin makes it so easy for you to get involved in a monetary system that is global"*. She also believes that it will be less risky to use Bitcoin because people no longer need to carry around cash.

In addition, it becomes less risky to shop when you don't have to carry cash. Cash means that accidents can happen, like being robbed, and then you lose your money. In addition, it gives you a completely different type of accessibility.

- Gina Pari

Knut Svanholm continues in the footsteps of Gina Paris. *"If you don't know what someone has, it's hard to take it from someone."* To keep one's Bitcoins safe, a so-called Seed Phrase is often used, which is a list of words that make up the "cryptographic seed" needed to restore Bitcoins on any computer in case the user's computer breaks, for example. A Seed Phrase usually consists of 12 words (Hall, 2021), which Knut Svanholm refers to in the quote below.

Bitcoin gives us a way to express value that no one can stop. You can memorize 12 words and cross any country border with a billion dollars in your head. It changes everything. Above all, it changes the incentives for violence. If you don't know what someone has, it's hard to take it from someone.

- Knut Svanholm

Furthermore, Knut Svanholm believes that the prerequisite for popular trust in Bitcoin increases if the institutions in a country do not function satisfactorily. *"The more unstable a country is, the more opportunities Bitcoin brings to the people of the country, the more trust there is"*. Kalle Rosenbaum believes that the whole of Bitcoin is based on trust, and that you have to trust the system to dare to use it.

All of Bitcoin is based on trust in some way. You have to trust the system to dare to use it, and that comes in parallel. People dare to try it and then build trust little by little. So trust is something that builds up over time, like trust capital. You can't teach that trust, people have to use the system and understand that it works over time.

- Kalle Rosenbaum

Knut Svanholm chooses to use a well-known quote in the Bitcoin world - *"Don't Trust, Verify"*. This common motto alludes to Bitcoin's cryptographic system of verification. Because Bitcoin's blockchain is open to the public, anyone can verify what happens in it. This means that you do not need to trust that a third party needs to verify what is happening, but that you can verify it yourself (Nakamoto, 2008).

In this, people don't even need to trust Bitcoin, no one needs to trust anyone. People will instead verify. Don't Trust, Verify. That is what the epic is, and that is the most important

lesson. You hold the wheel and take over the driver's seat of your own life. It is not about trust but about personal sovereignty, personal freedom and personal responsibility. Each individual becomes a sovereign state in themselves.

- Knut Svanholm

3.2.2 Practical Application

As for Bitcoin's practical application in developing countries, Alex Gladstein believes that we don't need to talk about theory. He emphasizes that there is already an implementation of Bitcoin in developing countries.

When we talk about the implementation of Bitcoin, we already see it. We see Bitcoin entrepreneurs and communities in, for example, Argentina and the Philippines building an economy on Bitcoin, receiving payments from abroad with Bitcoin, doing business in Bitcoin. I don't think we need to talk about theory here. It is about something that hundreds of millions of people are engaged in right now, around the world.

- Alex Gladstein

Javier Kafie talks about the implementation of Bitcoin as a dilemma. He believes that it is designed to be decentralized, but if a state chooses to implement Bitcoin as a currency, it suddenly becomes centralized. He then gives an example of El Salvador, which chose to create a state-owned wallet, called Chivo Wallet (Chivo Wallet, u.å).

It's a dilemma, the implementation of Bitcoin! Bitcoin is designed to be decentralized, but if a state chooses to adopt it as a currency, it suddenly becomes centralized. An example is the state of El Salvador backing Bitcoin with their own Chivo Wallet.

- Javier Kafie

Javier Kafie believes that power returns to the state when they produce a centralized wallet where the population can have their Bitcoins. The reason is that the wallet is then owned by the state, which could theoretically remove one of Bitcoin's most important functions - decentralization. However, residents do not have to use Chivo in El Salvador. Other Bitcoin wallets work just as well (Chivo Wallet, u.å).

Regarding the practical application of Bitcoin, Knut Svanholm, on the other hand, believes that it is not up to any government at all, but that it is up to each individual Bitcoin user. *"A practical application of this is not up to any government at all, but it is up to each individual Bitcoin user to do so".* He goes on to explain that *"Bitcoin is something that will grow from the bottom up, not the other way around"*. Kalle Rosenbaum agrees

with Knut Svanholm that the implementation of Bitcoin will come primarily from the people, and that the state will rather act as a counter force.

A Bitcoin revolution is emerging for everything from the people. Rather, the state will act as a counter force because Bitcoin threatens their power and ability to print new money. Many states will therefore fight against Bitcoin as long as it goes in different ways.

- Kalle Rosenbaum

All respondents agree that the implementation of Bitcoin will rather take place with the help of the population of a country than by the state. Furthermore, they also agree that it is good that El Salvador introduced Bitcoin as legal currency in 2021, but that the way it was done was wrong. Knut Svanholm explains it as follows:

Nayib Bukele and his government made a drive, and it is good that some country does it. Then I think that no one has the right to force anyone to use a means of payment at all, regardless of whether it concerns Bitcoin, the US dollar or any other currency. It should be up to everyone which medium they want to use to pay for themselves.

- Knut Svanholm

Kalle Rosenbaum explains the same.

One thing I really didn't like... In the law of El Salvador they wrote that you have to accept Bitcoin as currency. I don't think anyone should be forced into a certain currency, whether it's Bitcoin or any other. Then people are forced into something they don't want, and the whole idea of Bitcoin is based on consensus, that people agree and voluntarily participate.

- Kalle Rosenbaum

Javier Kafie explains how a large part of the population of El Salvador tried to oppose the implementation of Bitcoin. He believes, however, that this was mainly due to historical reasons and refers to when the country introduced the US dollar as its national currency in 2001. This was done without asking for the consensus of the people.

To some extent, something similar happened with the implementation of Bitcoin here in El Salvador last year. It was done very quickly and the law was adopted in a short time. I think it's perfectly normal that it scares people.

- Javier Kafie

Javier Kafie then returns to the issue of trust in the implementation of a new currency and believes that the president's popularity helped him a lot. *"On the other hand, Nayib*

Bukele has a great popularity here in El Salvador. His popularity helped the implementation a lot, because people trust him".

Alex Gladstein explains that he thinks it is good that El Salvador introduced Bitcoin as a secondary currency, and that all countries should do the same. *"I think it was good that El Salvador introduced Bitcoin as a secondary currency, I think all countries should do it!"* Furthermore, Alex Gladstein, just like Javier Kafie, talks about the problems with Chivo Wallet.

I don't think El Salvador would have created a state purse. Instead that creates a tool for abuse of power, a wallet as a central tool that can confiscate, that can help the state confiscate funds.

- Alex Gladstein

Continuing, Alex Gladstein emphasizes that, apart from Chivo Wallet, the introduction of Bitcoin as legal currency in El Salvador has been good. *"I think more countries should adopt Bitcoin, for sure. 10 years from now they will be good for El Salvador that they were the first to adopt Bitcoin. They made a smart decision".* Knut Svanholm also emphasizes a decade and draws a parallel between Bitcoin's progress and the Internet's progress.

Not much happens in a year, but a lot happens in a decade. What we are talking about is a change that will happen regardless of what our politicians say, and we can either have a smooth transition to this system or a violent one. I believe in a smooth transition, that's why we choose to take the more diplomatic way forward. We are talking about a change that changes everything on the whole earth, a bigger change than the internet actually. We are hugely early in this, much like the internet in the 70s.

- Knut Svanholm

That we are still in an early stage is something that Javier Kafie also wants to underline, *"I think it's important to understand that this phenomenon, this structure, is still classified as very, very new".* Gina Pari says the same. *"We need to give it time, but also be more open and understanding to Bitcoin. Because Bitcoin is new technology".*

Knut Svanholm also explains that a lot of things happen behind the scenes, and that we are currently in a time where things are happening all the time.

Right now, things are happening all the time, but a lot is happening behind the scenes. Madeira President Miguel Albuquerque speaks a lot about Bitcoin and was also at Bitcoin's

conference in Miami 2022. Prince Philip of Serbia has just come out on Serbian TV as positive about Bitcoin. A lot happens behind the scenes.

- Knut Svanholm

3.2.3 Challenges

When talking about the implementation of Bitcoin, several respondents chose to highlight the challenges involved in order for an application to take place. Javier Kafie believes that the biggest challenge for an application of Bitcoin to take place is to make people understand that Bitcoin is a tool that can be used, and not just an investment.

The biggest challenge is getting people to understand that this is a tool they can use, not just an investment. The biggest challenge is teaching people that. Bitcoin brings a lot of possibilities and new tools that are useful. People need to understand that.

- Javier Kafie

Kalle Rosenbaum agrees with Javier Kafie that more people need to understand that Bitcoin is more than an investment. He believes that the biggest challenge is to make the Western world understand why Bitcoin is important.

The biggest challenge is getting us in the western world to understand why Bitcoin is important. We see it as an investment, like buying an apartment or artwork on speculation, when in fact it can be a matter of life and death for other people. We have a little difficulty understanding that, I think.

- Kalle Rosenbaum

Kalle Rosenbaum continues to explain the reason why it has become this way. He believes that the reason for that is because the people in the Western world live in a reasonably free society where the money supply is relatively stable and where corruption is low, but also that the Western world is affected by lower corruption.

It has become so because we in the West live in a reasonably free society here, where the amount of money has not really galloped and where we have less corruption. And then we have our "swish app" which works far too well. This means that we do not see the struggle that many others in the world are engaged in to make life work together.

- Kalle Rosenbaum

Gina Pari highlights the importance of trying to listen to several voices, especially in the Western world where the media largely tries to polarize what is good and focus on what

is bad. Even Gina Pari points out that the benefits of Bitcoin are many and are about more than investment.

It is important not to only listen to a certain voice, especially in our world where a lot of media tries to polarize what is good with a focus on what is bad. Very little media covers the benefits of Bitcoin, and the benefits are many. It's not just investment or trying for companies to make money. It's about getting more people to become part of our financial system. We are talking about 2 billion people. Having two billion people out of our system causes more negative impact than we are prepared to see. And that is something that should be highlighted. Bitcoin is currently the best option.

- Gina Pari

Knut Svanholm also believes that people do not understand the problems with today's system, that more knowledge is required. *"The reason so many people have such a hard time understanding Bitcoin is because they don't understand the problems with our traditional money"*. Javier Kafie hopes that Bitcoin will continue to grow and that people will lose their fear of the new currency. Furthermore, he says that he believes that the way Bitcoin works, with its volatility, is the future. But to get there, Bitcoin will have to face major setbacks, partly from governments and financial institutions.

When they lose their power, they will fight against it. On the other hand, we have the dilemma of implementation. Should more states adopt Bitcoin as legal currency? Or should it happen more organically and grow from the people? I have no answer to that. We'll simply have to see what happens.

- Javier Kafie

4. Empirical Analysis

4.1 Bitcoin's opportunities in developing countries

4.1.1 Financial inclusion

According to Patwardhan (2018), financial inclusion and financial security are not only a goal but means to achieve goals. While financial inclusion may begin with account ownership, it doesn't end there. According to the majority of respondents, it doesn't start there either. Financial integration can increase by implementing Bitcoin in developing countries. Instead of the population of developing countries trying to lean on bank account holdings to become part of the financial inclusion, they can turn to Bitcoin.

Respondents agree that Bitcoin provides an opportunity for all people to access a financial system without having to prove who you are, where you live or where your income comes from.

By simply installing an app on a phone or wallet, people are given access to a global economy that is agnostic, that does not discriminate based on creditworthiness and social status. Just as Makina (2019) and Patwardhan (2018) highlight in their research, the technological revolution has become a key factor in promoting financial inclusion in developing countries. This is driven by mobile phones, technological innovations and changing consumer mindsets. This also includes Bitcoin, which was made possible by the rise of technology. Bitcoin could help achieve the UN and World Bank's key goal of increased financial inclusion to reduce poverty, which is part of the Sustainable Development Goals (UN, et al.) (The World Bank, 2022). Although financial inclusion begins with an entry into a financial system, it does not end there. According to Patwardhan (2018), many of the unbanked individuals are financially unhealthy and insecure. Financial insecurity has been shown to affect physical health and is closely associated with psychological problems such as depression and anxiety. The technological innovation accelerates the financial integration, not only it is seen in countries like Kenya (ibid), but in countries like El Salvador which in 2021 introduced Bitcoin as legal currency.

4.1.2 Bitcoin's Decentralization

Bitcoin also gives people the freedom to decide over their own lives, independent of a third party. All respondents agree that Bitcoin's decentralization is an important opportunity. Just as Hayek (1976) and the Austrian School sought, Bitcoin is a phenomenon that can replace state-issued currencies, helping to avoid the worst excesses of centralized control, especially with regard to the money supply. Bitcoin can be seen as a receipt for the concept that Friedman (1999) described as "decentralized currency", a reliable method where money can be transferred over the internet from A to B without A knowing B and without B knowing A.

Bitcoin's technical infrastructure also provides an opportunity to escape inflation. Like Ammous (2018), many respondents consider Bitcoin's resistance to inflation to be an important opportunity. This possibility can above all be applied in developing countries where the monetary value can easily vary widely. Knut Svanholm addresses the importance of a calculation unit in order to be able to make financial calculations and understand what one's actions lead to in the future. He believes that whenever it has

arisen on the free market, sooner or later people have started to manipulate and falsify it, and that the unit of calculation then ceases to be constant. This is based on the same concept as Nash's (2002) "ideal money".

Javier Kafie sees Bitcoin's decentralization as a great opportunity, at the same time, like Yermack (2013), he is worried about its technical infrastructure which means that there will be a maximum of 21 million. It is often said that Bitcoin grew out of the neoliberal tradition, such as the Austrian school, which believes that it is the purchasing power rather than the supply of money that matters. Yermack (2013) believes that Bitcoin's deflation mechanism will cause long-term structural problems. Javier Kafie believes that these problems could be that Bitcoin eventually becomes a system where some people have a lot of Bitcoins, and others have less, creating a system with large gaps. At the same time, he emphasizes that this is probably inevitable regardless of which system we choose to use. The remaining respondents, on the other hand, are not as worried. They rather rely on the Austrian school and the belief in Nash's idealistic money.

In addition to Bitcoin's decentralization providing a solution to the issue of inflation, censorship is also highlighted. In the same way that Segendorf (2014) and Vigna (2017) believe that Bitcoin entails a great risk in terms of fraud and accidents, Knut Svanholm and Gina Pari believe that Bitcoin brings opportunities for the people who are otherwise exposed to fraud and accidents. In developing countries in particular, a lot of cash is used. As Bitcoin brings the possibility of having money in your phone, the risk of being robbed, for example, decreases. If you don't know what someone has, it's hard to take it from someone. Knut Svanholm believes that this above all changes the incentives for violence. Departing Segendorf's (2014) and Vigna's (2017) arguments that the use of Bitcoin directly becomes more risky because Bitcoin is not imbued with any laws, such as inadequate consumer protection, is difficult. The fact that authorities do not have any legal possibilities in possession can be seen as both an advantage and disadvantage. Kalle Rosenbaum repeatedly mentions the issue of censorship. He believes that if there is a central point that must verify and approve transactions, this also becomes a hub for censorship. As the monetary system is designed today, any type of financial activity that the government disapproves of can be shut down. With Bitcoin it doesn't work, which makes the censorship an important opportunity for Bitcoin. Circumventing government control can in many cases be perceived as risky. Kalle Rosenbaum, on the other hand, believes that this gives people who live in totalitarian states an opportunity to express

themselves as they want, sell and buy what they want, and to leave the country if they want. *"In short - access to one's own life"*.

4.1.3 Volatility

Bitcoin's volatility is a factor that can scare many people. This is stated by Javier Kafie as well as Segendorf (2014). Segendorf (2014) believes that a major risk with countries starting to use Bitcoin instead of its current national currency is volatility. However, Javier Kafie hopes that people will let go of the fear of this, stressing that he believes that the way Bitcoin works, with its volatility, is the future. Gina Pari addresses the issue of volatility by talking about inflation in several developing countries. She believes that similar volatility can be found if you look at the local currencies issued by the central bank, which she exemplifies with, for example, Argentina, which had an inflation rate of 80 percent. In addition, both previous research and the respondents believe that there is a greater demand for Bitcoin's infrastructure in years when countries are undergoing an inflationary crises. According to Yermack (2013), the value of Bitcoin must become more stable in order for it to become more widespread than speculative investment. However, Alex Gladstein believes that Bitcoin is no longer a matter of "can", but that it is already happening. Bitcoin is already bringing new infrastructure to developing countries in Africa, Southeast Asia, Latin America, the Middle East and Central Asia.

4.2 Implementation of Bitcoin in Developing Countries

4.2.1 Trust

Financial systems are largely based on trust. According to Möllering (2001) and Makina (2019), trust is one of the most important forces within society, including central institutions and states, as well as Bitcoin. Javier Kafie believes that when talking about money and currencies, about 90 percent is about trust. According to the majority of respondents, trust is an important factor in implementing Bitcoin in developing countries. In order for Bitcoin to work at all, the majority of respondents believe that popular trust is required. Möllering (2001) bases parts of his analyzes on Simmel's theories, which state that without the trust that exists between people and their institutions, society would crumble. Several respondents believe that Bitcoin is based on trust alone. They believe that trust is a central condition for Bitcoin to preserve its value. Since Bitcoin is decentralized and controlled by the users, connections can be drawn to Simmel's ideas that trust is connected to the trust people have between each other. Knut Svanholm strengthens Simmel and Möller's (2001) theory about this. He believes that the prerequisite for popular trust in Bitcoin increases if the institutions in a country do

not function satisfactorily. When trust between citizens and central institutions crumbles, many countries choose to look to other options.

Ayken's (2005) Social Theory of Current Crises suggests that trust relationships affect currency stability, which can be applied to Bitcoin. The respondents believe that basically all of Bitcoin is structured and dependent on trust. Bitcoin's volatility thus reinforces Ayken's emphasis that trust is something dynamic and not something that can be taken for granted. Möller's (2001) model of three stages requires understanding the phenomenon to be trusted. One of the stages is called interpretation and highlights the human experience and perception of how the world works. Möllering (2001) believes that this is a cornerstone of trust. Indirectly, this means that trust in Bitcoin will be based on the interpretation people have around it. The majority of respondents agree that one needs to understand Bitcoin in order to trust it. At the same time, Gina Pari believes that many people today trust their monetary system without really understanding it, which contradicts Möllering's (2001) stage of interpretation. Knut Svanholm, on the other hand, believes that when it comes to Bitcoin, we don't need to trust anyone, not even Bitcoin. Bitcoin's technical infrastructure is instead created so that every single user can verify what is happening in the blockchain instead of trusting it.

4.2.2 Practical application

Hossin and Hossain (2018) believe that Bitcoin fails as a measure of value as well as a store of value. On the other hand, they present a solution to the problem of volatility, which means that Bitcoin's value would be tied to another currency. This would make it more stable and predictable. However, Hossin and Hossain (2018) emphasize that this will likely never happen because Bitcoin's network is designed to be decentralized and independent of other control. Nevertheless, a large part of the previous research and several respondents argue that Bitcoin should be seen as a complement to the already existing financial structures instead of a substitute. Gina Pari agrees with Jun (2018), Ølnes and Jansen (2017) that the most ideal would be to have a centralized currency and Bitcoin as a secondary one. This creates options for people and stops central power from freezing your assets. Even Alex Gladstein sees Bitcoin as a complement to the already existing currencies, but believes instead that Bitcoin should exist as a foundation on which people can build all sorts of other types of currencies. According to Alex Gladstein, this foundation will be important for human prosperity and flourishing in the future. Knut Svanholm, on the other hand, believes that Bitcoin should be seen as a substitute

for the current monetary system and that this is a reality we face whether we like it or not.

Even before Bitcoin existed, when Hayek (1976) conducted his research on a similar decentralized phenomenon, he admitted that a radical change like this would be unlikely because the primary obstacle would be political. All respondents share the same opinion as Hayek. Ølnes and Jansen (2017), as well as Shin and Rice (2022) also underline the difficulty of breaking down institutional barriers. Shin and Rice (2022) believe, unlike Ølnes & Jansen (2017), that a transition will not happen in the way that many people expect, but governments will try to design systems to redistribute power. They argue that governments will purposefully adapt the social and technological elements of how societies develop to realize a national strategy (Shin & Rice 2022). Shin and Rice's (2022) theory can be applied to El Salvador's implementation of Bitcoin as legal currency. In connection with the implementation, the country also created a centralized wallet, which Shin and Rice (2022) would explain as a way for the government to design new systems to redistribute power. Javier Kafie talks about the implementation of Bitcoin as a dilemma. Bitcoin is designed to be decentralized but when a state chooses to implement Bitcoin as a currency and issue a state-owned wallet, Bitcoin suddenly becomes centralized. However, several respondents agree that a practical application of Bitcoin is not up to any government at all, but that it should grow from the bottom up, from every single Bitcoin user.

That several countries, companies and institutions choose to turn to Bitcoin also strengthens Patwardhan's (2018) statement that there is an increased awareness of the need for financial integration. Policymakers and regulators have increasingly begun to make financial inclusion a priority, and several governments are taking comprehensive measures to improve access to financial services. Knut Svanholm highlights this when he talks about how much happens behind the scenes, for example that Prince Philip in Serbia and the President of Madeira speak with a positive attitude about Bitcoin. However, Alex Gladstein wants to emphasize that when we talk about the implementation of Bitcoin, we no longer need to talk about theory. He believes that we already see the implementation taking place in communities in, for example, Argentina, El Salvador and the Philippines that build an economy on Bitcoin, receive payments from abroad with Bitcoin and do business in Bitcoin.

5. Conclusion

5.1 Conclusions

Currently, we do not know what the future monetary system will look like, this applies to developing countries as well as other countries in the world. What can be stated, however, is that the acceptance of digital currencies is growing around the world. At the same time, after the essay process, it can also be determined that Bitcoin is a divided subject where many are both critical and positive. It is not possible to draw concrete conclusions from the empirical analysis in an unvarnished way. In order to link back to the purpose of the essay, to investigate and analyze the possibilities Bitcoin that technical infrastructure could bring in developing countries and speculate on how feasible an introduction of this could be, we should look to the empirical analysis of the survey. By connecting previous research, the essay's theoretical frame of reference and empirical evidence, it is possible to arrive at conclusions that correspond to the essay's purpose.

A vital need to carry out an implementation of Bitcoin in developing countries is that users feel confidence in the phenomenon. This has been illustrated by both the essay's empiricism and theory. Furthermore, it can be stated that Bitcoin's volatility is one of several factors that affect confidence in Bitcoin, and which has made it difficult to apply Bitcoin. However, the volatility of Bitcoin can be compared to the hyperinflation that prevails in several developing countries, which means that people in these countries rather see Bitcoin as an inflation hedge. Bitcoin's technical infrastructure is designed so that there will never be more than 21 million Bitcoins. Today there are approximately 19 million Bitcoins and until then new Bitcoins are created with a decreasing growth rate until this limit is reached. Both previous research, the paper's empiricism and theory highlight that Bitcoin's natural effect of deflation gives rise to divided perceptions. A relatively shared view in the essay, in accordance with the Austrian school, is that the amount of money itself is immaterial. The essential thing is the demand and the value that this attributes. As for the opportunities Bitcoin could bring in developing countries, a large part of these concerns Bitcoin's decentralization. Bitcoin is decentralized and not based on any other central authority. In a Western context, it becomes more difficult to understand the problem of being dependent on a third party. But in developing countries where many authorities and institutions are not considered completely neutral and trustworthy, Bitcoin's decentralization brings an opportunity for the population to bypass government control. This also enables a route into a financial system that many

people in developing countries are otherwise excluded from. With financial integration and access to a global monetary system comes a host of other benefits. Another thing that can be stated is that the development of technology is going fast and developing countries are becoming more and more accessible to technological innovation, which is one of the reasons why several countries are being reached by the Bitcoin phenomenon. Just ten years ago, far fewer people knew what Bitcoin was. As Knut Svanholm says, I want to summarize Bitcoin's development, *"Not much happens in a year, but a lot happens in a decade"*. Where we will be in another decade is only up for speculation, but there are good reasons to speculate in Bitcoin's favor.

To link back to the essay's question:

- *What are the biggest opportunities bitcoin could bring to developing countries as a technological infrastructure?*
- *How feasible is an introduction of this?*

The words "could" become dangerous to say against, so for the time being everything is possible. But after the completion of this essay, my conclusion is that Bitcoin as a technological infrastructure could bring great opportunities in developing countries, and in all countries of the world in general. As Hayek (1976) noted, a decentralized currency could enable a freer world, where we don't have to rely on the government to determine the value of a dollar and where we don't have to rely on financial institutions every time a fiat currency is used. Perhaps this opportunity is Bitcoin. The feasibility of this is not made impossible, rather the opposite. An implementation of Bitcoin as a technical infrastructure around the world is already happening, whether we like it or not. What the future of Bitcoin will look like simply remains to be seen.

5.2 Proposals for further research

This study shows that the acceptance of digital currencies is growing around the world, but since the paper has a relatively narrow approach, in that it is based on respondents who are positive about Bitcoin and since previous research is somewhat limited, it requires further studies to validate it. It would have been interesting to take part in a study aimed at the risks Bitcoin could bring in developing countries, or a broader study about digital currencies, and not only about Bitcoin. Another area of research that would have been interesting to investigate is what consequences an application of Bitcoin could have in a country like Sweden. Although the need for financial integration may make Bitcoin as a research area more essential in developing countries, Bitcoin and its

technological infrastructure could also present opportunities in more developed countries. Perhaps a future look back at the long-term process of establishing Bitcoin in developing countries can depict a significant role for a brand new global monetary system.

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Svanholm, K. Interview. Conducted by Ammy Edberg, 9 December 2022

Appendix 1 - Interview guide

Introductory questions:

May I use your name and professional title in the essay, or do you want to remain anonymous?

1. What is your professional title?
2. What is your relationship with bitcoin?

Bitcoin as an opportunity:

3. What do you consider to be the biggest opportunities Bitcoin could bring as a technical infrastructure in developing countries?

Bitcoins decentralization:

4. What opportunities do you see in Bitcoin not being tied to a central bank or other institutions?
5. Bitcoin is designed so that there will be a maximum of 21 million, what is your view on this?

The feasibility of these:

6. How possible is the implementation and practical application of these opportunities?
7. How important is the trust within the population to be able to implement these applications?

El Salvador:

8. In September 2021, El Salvador introduced Bitcoin as legal currency. What are your comments on that? How has that country fared? How can it go in the future?

Other:

9. Are there any other points you would like to raise?